How Cisco IT Improved Development Processes with a New Operating Model

New way to manage IT investments supports innovation, improved architecture, and stronger process standards for Cisco IT

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Cisco IT Case Study / Business of IT / Cisco IT Operating Model:

This case study describes the Cisco IT operating model, which guides how Cisco IT supports the company's strategies and operations. With the new operating model, Cisco IT can identify new business priorities and generate funding for IT investments that enable those priorities, while maintaining a flexible and stable enterprise architecture and effectively using IT resources to respond quickly to new business opportunities. Cisco customers can learn from Cisco IT's real-world experience to help support similar enterprise needs.

Challenge

"The IT operating model helps us work more effectively by creating consistency in how we deliver capabilities to the business and linking business and technical architecture. We can make better, faster decisions because the right processes, frameworks, and metrics are in place to guide us from architecture through operations. The operating model is the key to operational excellence, which allows us to put a greater focus on innovation for the company."

Rebecca Jacoby, Senior VP and CIO Cisco

As a company, Cisco must adapt quickly and appropriately to rapidly changing business environments, new business opportunities, and new markets. In support of these efforts, Cisco IT must also deliver new services and capabilities without sacrificing the performance or stability of existing IT services. To keep pace with the new ways in which Cisco conducts its business, Cisco IT must address the following:

- Business capabilities, including applications, databases, system integrations, and new technology deployments, must support new Cisco business models and technologies.

- Technical capabilities for network infrastructure, systems, and applications must enable efficient, globally scalable Cisco business operations.

- IT internal operations must efficiently develop effective new IT services that meet the expectations of users and management.

Meeting the demand for IT services is challenging in a company as large as Cisco, because each group and business unit has its own lengthy wish list of IT capabilities. In the past, Cisco IT project requests were often hindered by unclear processes for engaging IT work, development barriers, and uncertain availability of the necessary IT employee and financial resources.

Cisco IT needed a consistent way to organize, prioritize, and choose projects to address common, high-priority needs for the company while also defining IT investments that could be delivered with timeliness and quality.

Given the complex challenges, Cisco IT had to fundamentally change its strategy, processes, and culture. IT needed an entirely new model for working with the business to deliver and support new technical capabilities to meet business goals.

Solution

The new IT operating model provides an integrated decision framework for Cisco IT to translate business needs into specific IT technologies and services.

For example, as Cisco begins selling software as a service, IT must support new capabilities for purchasing, invoicing, and support. The new operating model enables Cisco IT to actively participate in defining these new capabilities, which in turn helps Cisco IT develop better-targeted services to support new business needs.

The new operating model (Figure 1) also adds more rigor to determining and prioritizing IT investments. The existing Project Lifecycle (PLC) model for IT project planning remains, but the operating model provides more effective methods to integrate business priorities into Cisco IT project planning and allocate the right resources at the right time during each PLC phase. "Processes that support the operating model were in place throughout IT," says Patrick Bradley, Cisco IT Manager. "Our challenge was to bring them together and cross-functionally integrate them into a single, scalable model to enable business alignment and a process framework for IT."

Figure 1. Operating Model Addresses Major Cisco IT Development and Operational Processes
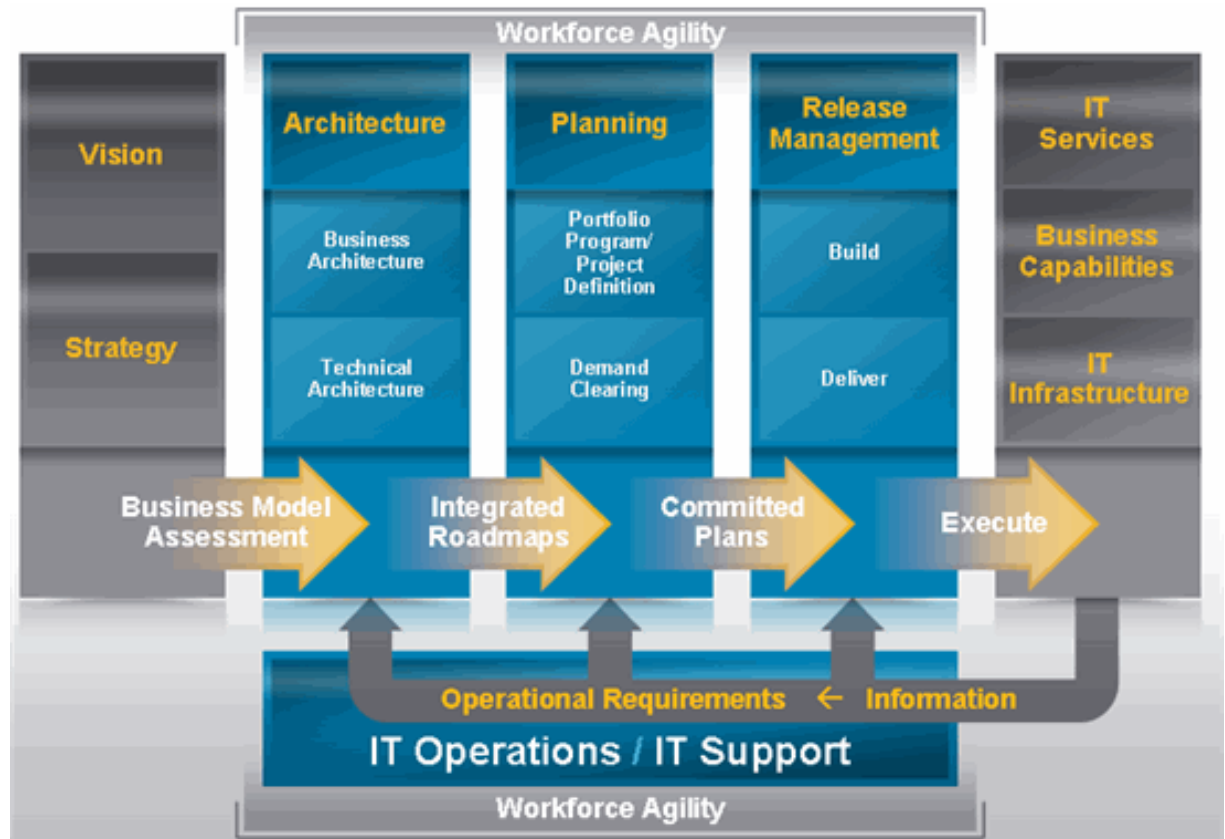
Vision and Strategy

The vision and strategy for the operating model define strategic priorities and business directions for Cisco as a company. Vision and strategy are usually expressed in a language of very high-level business outcomes, such as serving new markets or delivering new product types.

At Cisco, the envisioned outcomes are translated by the internal Cisco Operating Committee and Cisco's structure of corporate councils and boards into a set of strategic priorities for the company. Corporate councils and boards are accountable to the Operating Committee, which includes the CEO, his direct reports, and all executive vice presidents. The chief information officer (CIO) represents Cisco IT on the Operating Committee, and sits on several corporate councils, including the Connected Business Operations Council (CBOC), the CBOC Business

Model Enablement Board, and the Enterprise Council. One responsibility of the CIO is to understand what IT needs to do to enable each of the business strategies of the Operating Committee, business committees, and boards. However, identifying these IT activities is a significant challenge, because translating new business directions into specific directions for technical applications and infrastructure requires a blend of business knowledge, technical knowledge, and innovation.

The new operating model helps the Cisco CIO convey the company's business vision and strategies to the IT organization. For example, an ongoing Cisco strategy is to improve commerce capabilities. Helping Cisco customers and partners order, configure, and obtain prices for Cisco products and services can be a very complex task. Commerce tools must also accommodate numerous differences in product sales factors, such as optional hardware modules or usage-based pricing for software. The Cisco Operating Committee defines the company's commerce vision and strategy into a roadmap for integrated commerce capabilities that Cisco IT uses for the next level of the operating model: making architectural decisions.

The operating model also helps the CIO justify IT investment decisions to company executives. For example, the business requirement to reduce travel budgets enabled IT to justify funds to enlarge the enterprise WAN and add hundreds of new Cisco TelePresence™ endpoints. The need to respond more quickly to new processing-intensive business models such as the Cisco WebEx™ "software-as-a-service" model, and the Cisco® Remote Operations Services (ROS) "IT- as-a-service" model enabled IT to justify significant new funding for a completely new data center expansion and consolidation program.

Architecture

Architecture processes translate vision and strategy into a form that Cisco IT managers can use to make specific decisions about developing new IT capabilities and services.

Business Architecture

Business architecture provides a holistic picture of how Cisco business operates at the highest level and a set of overall directions for Cisco IT over the next few years. Business architects work with Cisco executives to identify how to improve business processes across all functional areas in the company. Business architects also work with Cisco IT technical architecture teams to determine how IT can implement and support business improvements.

For example, Cisco sales leaders recognized that customers could not purchase products and their associated services together on a single order in the Cisco e-commerce system. The reason? Cisco IT maintained separate e-commerce processes and applications for separate Cisco sales and customer service groups. The business architecture team, through business consultation, defined the requirements for integrating these IT processes at the business level, with the goal of giving Cisco customers a single ordering application, and then passed these business requirements to the technical architecture team.

The primary benefit of business architecture is better alignment of Cisco IT projects with the company's business needs and operations. The business roadmap for this process gives a clear understanding of the business objectives and directions that Cisco IT must support.

Technical Architecture

The technical architecture team defines how Cisco IT enables the business through technical solutions. This team's long-term objective is to create a technology roadmap for Cisco IT that covers major areas such as network infrastructure, applications, data, and IT processes. This roadmap is developed with input from the various IT functional groups, which allows the team to identify opportunities for Cisco IT to integrate processes and technologies to align the base architecture, resulting in a more flexible, agile infrastructure.

Technical architecture helps Cisco IT maintain technology standards through a consistent set of guidelines and review processes. For Cisco, the implementation of a standards-based technical architecture leads to lower cost of IT ownership and less redundancy in the company's overall technology investment.

The technical architecture team must also consider that architectural changes in IT can require a year or more to complete, which means these changes often must be started before the business requirements have been fully identified. This element of the unknown forces the team to design a flexible technical architecture with components that can be easily integrated and functions that can be reused in a variety of ways. Building a service-oriented architecture, supporting common interfaces, and maintaining standards are examples of IT practices that support a flexible technical architecture.

Planning

Planning functions transform integrated roadmaps from the business and technical architecture teams into specific Cisco IT development investments.

Portfolio, Program, and Project Definition. The definition processes identify, approve, and prioritize Cisco IT development efforts. Depending on the scope, new Cisco IT work can be defined as a project (a specific development effort) or a program (encompasses multiple related IT investments). Related projects and programs are grouped together into a portfolio, which allows for integrated management of Cisco IT work in a particular area.

Recognizing that not every request to Cisco IT can be accomplished, the definition processes focus on three major tasks:

1. Prioritizing IT investments, whether identified in the Cisco IT business and technology roadmaps, received as a direct request from a Cisco organization, or generated within IT as an idea for improvement

2. Identifying dependencies among IT investments so that Cisco IT can integrate and streamline development efforts

3. Defining all resource types required for a project to assess project feasibility

Because the new operating model integrates this planning across IT investments and programs, Cisco IT can focus on addressing the company's business needs.

These definition processes let Cisco IT focus on the work that delivers the highest business value to the company. Cisco groups and business units that request new IT capabilities gain more certainty about when their IT investments are being initiated, and once the investments are begun, the requesters can be more confident that their IT investments are more quickly completed.

Demand Clearing

Demand clearing identifies in advance the availability of shared resources for specific Cisco IT investments, and allocates them across all projects as needed. These resources include Cisco IT employees as well as hardware and software, data center space and power, network capacity, and other infrastructure.

Traditionally, Cisco IT teams were dedicated to projects for individual Cisco groups, or even to specific teams within those groups, such as host processing, data center storage, remote access, or partner extranet. As a result of this project-specific focus, the Cisco IT teams did not always know whether they were dedicating their efforts to the projects that provided the greatest benefits to Cisco or overall operations. With the new demand clearing processes, Cisco IT teams know about the work of related teams, and resources can be applied from all teams, across all projects. This capability will allow for better project scheduling, management, and coordination of efforts.

Demand clearing helps ensure that shared resources are available to program managers when needed. Shared IT employees such as database administrators can have more steady, manageable, and predictable workloads.

Release Management

Release management comprises the processes that Cisco IT uses to build and deliver capabilities and services, and to control the release of service and technology changes into the IT production environment.

Within Cisco, an enterprise release management group oversees activities for large, usually cross-functional releases that are implemented in the IT infrastructure on a planned, quarterly schedule. Additionally, many IT teams over time have established their own processes for handling releases that affect only certain organizations, applications, network areas, or user groups.

Release management at the enterprise level improves Cisco IT's ability to reduce the impact of complex changes on an already very complex IT environment by using standardized release management processes and schedules. The new operating model enables a move to more formal release management activity across Cisco IT.

When the new release management processes are used, changes are introduced into the production IT environment with less risk. Change-related downtime is less frequent, users experience higher availability, and Cisco groups and business units experience faster implementation of their changes at lower expense.

Operations and Support

The primary objective of operations and support is to enhance the user experience by maximizing the IT system availability and performance. Within Cisco, the internal help desk, called the Global Technical Response Center (GTRC), handles user support and many operational issues in the Cisco IT infrastructure. For major problems, or when recurring problems emerge, the GTRC engages the appropriate Cisco IT operations team for help to identify root causes and problem solutions.

The Cisco IT operations and support teams adhere to established standard processes and metrics for incident, problem, and change management at all levels of service priority in order to manage and measure services effectively across Cisco IT. They then hand off many of these service functions to Cisco Remote Operations Services to monitor and support. In the future, these standard practices will include configuration management and centralized application support to further optimize Cisco IT's production services. All of these efforts are enhanced by the new operating model.

When IT operations work well, users experience uninterrupted, high-performance system and application services. System performance and availability are key influencers of user productivity and can have substantial, tangible financial and customer satisfaction benefits for Cisco as a company. In addition, when Cisco IT staff needs to spend less time on unplanned activities such as managing problems, they have more time to develop new capabilities, which is a better use of IT budgets.

Workforce Agility

Cisco's vision for workforce agility area is a collection of processes that deliver capable and engaged staff for work on Cisco IT investments and programs. This area includes the processes of workforce planning, hiring, training, retention, and management, all of which are collaboratively handled by Cisco IT and the Cisco human resources group.

This approach to workforce management is distinctly different from the methods that Cisco IT project managers traditionally used to find team members. For example, in addition to posting open jobs with Cisco HR, IT managers sometimes negotiated directly with other managers to reassign specific employees with specialized skills to their projects. In some cases, projects were delayed until the right employee became available.

As Cisco IT continues to improve its workforce agility processes, Cisco managers will be able to anticipate staffing needs more easily, and the right employees will be available in the right place, at the right time for new IT projects. Open jobs will be filled quickly, employees will constantly learn what they need to know to be successful today and tomorrow, and employees will do work that interests them.

Results

Although the new operating model delivers many benefits, perhaps the most significant is better integration of IT activity with Cisco business strategy. Through operating model structure and processes, Cisco IT is more able to plan infrastructure and services to meet business needs. Cisco business leaders have a better understanding of how Cisco IT programs support their business priorities, and they are more apt to approve funding for programs when they understand the direct business benefits. Within Cisco IT, clear ownership of planning and development processes exists. Employees more easily understand the impact of their work on Cisco's success.

Additionally, the operating model creates a planning and process environment where IT and business representatives are encouraged to work more closely together. Cisco expects this collaboration will encourage development of more innovative IT services to support the company's business activities.

Lessons Learned

As Cisco IT has started to implement the new operating model, managers have gained several valuable lessons.

- **Promote employee acceptance of change.** The new operating model brought significant new ways of working for Cisco IT. Any change of this scope and nature can understandably create concerns among employees.

  Cisco IT addressed these concerns through a variety of awareness and education efforts. For example, employees participated in a one-day workshop to learn about demand clearing basics. This also validated the demand clearing process and provided feedback to the operating model team. Additional workshops, presentations at team meetings, and monthly CIO update presentations also promoted employee understanding and acceptance of the new Cisco IT Operating Model.

  During the entire change effort, collaboration technologies were used, including Cisco MeetingPlace®, WebEx, and Cisco's internal video-sharing application. These collaboration technologies minimized travel and enhanced global participation. Several global workshops were entirely run using collaboration technologies.

- **Use the right methodologies for the problem.** The design and deployment of the IT operating model used components of multiple methodologies and process frameworks including ITIL (especially within operations and management processes) and Six Sigma/Lean methodologies for cross-functional process design. No single approach had all the answers; a combination of various methodologies gave the best overall result in designing and delivering the operating model.

- **Provide reminders that an operating model involves more than governance.** Discussions about a new IT operating model and the associated design of new processes can easily slip into a focus on governance because people are more knowledgeable and comfortable with that concept. Everyone involved in implementing the operating model can benefit from reminders that its focus is more on collaboration than control: collaboration among diverse Cisco business groups and IT, and collaboration across diverse IT groups, which requires a shift to a broader level of thinking about IT processes, strategies, and decisions. "To help ensure that the IT organization continued to provide both stability and innovation, we needed to develop a model that balanced collaboration with governance. Designing processes for control is easy; designing for effective collaboration is not," says Patrick Bradley, Cisco IT manager and Six Sigma Master Black Belt.

- **Deploy the new model in stages.** Cisco IT executives know that the scope of the operating model meant its changes could not be implemented all at once. Instead, Cisco IT is following a phased implementation and assessing progress against an organizational maturity model. Using a structured approach to the operating model deployment also allows integration with other complementary organizational initiatives.

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